

ABSTRACT

The invention relates to a glass and a glass-ceramic comprising beta-quartz and/or keatite solid solutions, and to a process for their production, and to their use as substrate material for coating. Glass-ceramic comprising beta-quartz and/or keatite solid solutions with a surface roughness without polishing of  $R_a < 50$  nm, a thermal expansion in the temperature range between  $20^\circ\text{C}$  and  $300^\circ\text{C}$  of  $< 1.2 \cdot 10^{-6}/\text{K}$ , a transmission in the near infrared region at  $1050$  nm of  $> 85\%$  for a  $4$  mm thickness, and a composition in % by weight, based on the total composition, containing:

$\text{Li}_2\text{O}$	3.0-5.5
$\text{Na}_2\text{O}$	0-2.5
$\text{K}_2\text{O}$	0-2.0
$\Sigma \text{Na}_2\text{O} + \text{K}_2\text{O}$	0.5-3.0
$\Sigma \text{MgO} + \text{ZnO}$	< 0.3
$\text{SrO}$	0-2.0
$\text{BaO}$	0-3.5
$\text{B}_2\text{O}_3$	0-4.0
$\text{Al}_2\text{O}_3$	19.0-27.0
$\text{SiO}_2$	55.0-66.0
$\text{TiO}_2$	1.0-5.5
$\text{ZrO}_2$	0-2.5
$\Sigma \text{TiO}_2 + \text{ZrO}_2$	3.0-6.0
$\text{P}_2\text{O}_5$	0-8.0
$\text{Fe}_2\text{O}_3$	< 200 ppm
$\text{F}$	0-0.6 as substitute for O

and, if appropriate, at least one refining agent, such as  $\text{As}_2\text{O}_3$ ,  $\text{Sb}_2\text{O}_3$ ,  $\text{SnO}_2$ ,  $\text{CeO}_2$ , sulphate and chloride compounds.